

FORM-PTO-1390 (Rev. 9-2001)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				027544-019	
				U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) UNASSIGNED 09/980224	
INTERNATIONAL APPLICATION NO. PCT/EP99/03819		INTERNATIONAL FILING DATE May 31, 1999		PRIORITY DATE CLAIMED May 31, 1999	
TITLE OF INVENTION SYSTEM AND METHOD FOR DISTRIBUTING AIRLINE INFORMATION TO CLOSED USER GROUPS					
APPLICANT(S) FOR DO/EO/US Ralph WOLS					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.					
2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.					
3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.					
4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).					
5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))					
a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).					
b. <input checked="" type="checkbox"/> has been communicated by the International Bureau.					
c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).					
6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2))					
a. <input type="checkbox"/> is attached hereto.					
b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).					
7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))					
a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).					
b. <input type="checkbox"/> have been communicated by the International Bureau.					
c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.					
d. <input checked="" type="checkbox"/> have not been made and will not be made.					
8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).					
9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).					
10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).					
Items 11 to 20 below concern document(s) or information included:					
11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.					
12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.					
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.					
14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.					
15. <input type="checkbox"/> A substitute specification.					
16. <input type="checkbox"/> A change of power of attorney and/or address letter.					
17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.					
18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).					
19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).					
20. <input checked="" type="checkbox"/> Other items or information: International Preliminary Examination Report, Unexecuted Declaration					

U.S. APPLICATION NO. (if known, see 37 CFR 1.51) PCT/EP99/03919 09950224		INTERNATIONAL APPLICATION NO. UNASSIGNED		ATTORNEY'S DOCKET NUMBER 027544-019	
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21. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS		PTO USE ONLY	
Basic National Fee (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1,040.00 (960) International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 (970) International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00 (958) International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 (956) International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 (962) <div style="text-align: right;">ENTER APPROPRIATE BASIC FEE AMOUNT =</div>				\$ 890.00			
Surcharge of \$130.00 (154) for furnishing the oath or declaration later than 20 <input type="checkbox"/> 30 <input type="checkbox"/> months from the earliest claimed priority date (37 CFR 1.492(e)).							
Claims	Number Filed	Number Extra	Rate				
Total Claims	12 -20 =	-0-	X\$18.00 (966)	\$ -0-			
Independent Claims	2 -3 =	-0-	X\$84.00 (964)	\$ -0-			
Multiple dependent claim(s) (if applicable)			+ \$280.00 (968)	\$ -0-			
TOTAL OF ABOVE CALCULATIONS =				\$ 890.00			
Reduction for 1/2 for filing by small entity, if applicable (see below).				+		\$ -0-	
SUBTOTAL =				\$ 890.00			
Processing fee of \$130.00 (156) for furnishing the English translation later than 20 <input type="checkbox"/> 30 <input type="checkbox"/> months from the earliest claimed priority date (37 CFR 1.492(f)).				+		\$ -0-	
TOTAL NATIONAL FEE =				\$ 890.00			
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 (581) per property				+		\$ -0-	
TOTAL FEES ENCLOSED =				\$ 890.00			
				Amount to be refunded:		\$	
				charged:		\$	

a. ☐ Small entity status is hereby claimed.

b. ☒ A check in the amount of \$ 890.00 to cover the above fees is enclosed.

c. ☐ Please charge my Deposit Account No. 02-4800 in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

d. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-4800. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404

Alexandria, Virginia 22313-1404

(703) 836-6620

SIGNATURE

Kenneth B. Leffler

NAME

36,075

REGISTRATION NUMBER

November 30, 2001

DATE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Ralph WOLS) Group Art Unit: UNASSIGNED
Application No.: UNASSIGNED) Examiner: UNASSIGNED
Filed: November 30, 2001)
For: SYSTEM AND METHOD FOR)
DISTRIBUTING AIRLINE)
INFORMATION TO CLOSED USER)
GROUPS)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE ABSTRACT:

Kindly enter the Abstract submitted herewith on the sheet attached hereto.

IN THE CLAIMS:

Please amend claims 1 - 10 and 12 as follows:

1. (Amended) A system for distributing information to closed user groups comprising a system server, preserving personal settings of members of said closed user group, that is connected to Internet, to a GSM network and to an external system interface, where the system provides mail services, GSM-services, voice mail services, GSM-services, IN services or another service being subscribed of a telephone provider, characterized in that the system also comprises:

a central database, which stores all notifications together with their status of distribution;

a message database, which contains the prepared message e.g. SMS, Voice messages, E-mail, Fax or, Telex messages, that are to be distributed to the different medium;

message distribution databases, which contains all incoming notifications and prepared messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user;

information databases;

a message generator for generating messages according to a profile previously specified by the member of the closed user group, which selects a notification from the central database, creates a new message for distribution by one of the selected media, and stores the prepared message in the message database for further distribution; and

a message sender for distributing the information to the user, which selects the available messages from the message database and distributes the different messages types to the different distribution media;

distribution senders for sending messages to the user;

distribution receivers for sending messages to the user; and

a message status handler, which reads out new information received in the medium databases for registration purposes to provide feedback for system and the central database.

2. (Amended) An information distribution system according to Claim 1, characterized in that message distribution databases are:

a SMS message database, which contains all incoming notifications and prepared SMS messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via SMS;

a voice message database, which contains the prepared voice messages that have to be distributed and the status of the voice messages;

an E-mail message database, which contains all prepared E-mail messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via E-mail;

a Fax message data-base, which contains all prepared Fax messages that have to be distributed to the requested addresses; and

a Data message database, which contains all prepared data messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via data messages.

3. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises:

a History information database, which contains the history information in regard to users and events;

a System info database, which contains all system parameters for tuning the system; and

a Personal information database, which contains the user specific information such as the user's service description including the templates which are used to generate messages for different medium in different languages.

4. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises:

a SMS sender, which distributes SMS-messages to the user;

a Voice Response Unit (VRU) sender/receiver, which handles inbound calls as well as outbound calls, that are handled according to the information stored in the voice message database;

an E-mail sender, which distributes E-mail messages to the user;

a Fax message sender, which distributes Fax-messages to the user; and

a Data message sender, which distributes Data messages to the user.

5. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises:

a SMS receiver, which receives SMS-messages from the user;

a voice Response Unit sender/receiver, which handles inbound calls as well as outbound calls, that are handled according to the information stored in the voice message database;

an E-mail receiver, which receives E-mail messages from the user; and

a Data message receiver, which receives Data messages from the user.

6. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises:

a third party interface, which connects the system to an external system;

a third party application database, which contains the information of an external system;

a unit for classifying and updating history information; which stores the updated information to the history information database; and

a unit for having a user accessing the Internet page of the service provider and enter the notification information to his specific user profile.

7. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises:

a Presentation layer, which is used to maintain and monitor the service and as an interface for accessing all databases and processes.

8. (Amended) A method in a system for distributing information to closed user groups according to claim 1, characterized in that the method comprises the steps of

translating a new message into a notification message by message generator according to settings in the Personal information database;

informing the customer in case of a notification using a certain medium;

selecting a new medium in case the customer can not be reached with a certain medium;

repeating the steps of informing the customer and selecting a new medium using all specified media until the customer is reached.

9. An airline information distribution system according to Claim 1, characterized in that the system is configured so, that

when a notification is sent from the external system to the system server, the system server will send a notification and an alternative flight offer over a medium that is selected according to the user profile and that

when in case there is no response from the customer, an alternative medium is selected according to the user profile; and that

when the customer confirms the alternative flight booking there is a confirmation sent back to the customer.

10. (Amended) An airline information distribution system according to Claim 9, characterized in that the system is configured so that a user can specify the conditions, in which the system server will send notifications towards the user, and how the notifications are to be performed.

12. An airline information distribution system according to Claim 9, characterized in that the system is configured so that the user can select to whom the notifications are to be sent.

Application No. UNASSIGNED
Attorney's Docket No. 027544-019

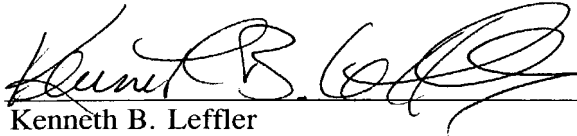
REMARKS

The claims of the originally-filed application were drafted in accordance with a foreign patent practice. The claims are hereby amended merely to present an initial set of claims for examination that conform to U.S. patent practice.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:



Kenneth B. Leffler

Registration No. 36,075

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: November 30, 2001

Application No. UNASSIGNED
Attorney's Docket No. 027544-019

Attachment to Amendment dated November 30, 2001

Marked-up Claims 1 - 10 and 12

1. (Amended) A system for distributing information to closed user groups comprising a system server [(17)], preserving personal settings of members of said closed user group, that is connected to Internet [(11)], to a GSM network [(1)] and to an external system interface [(20)], where the system provides mail services, GSM-services, voice mail services, GSM-services, IN services or another service being subscribed of a telephone provider, characterized in that the system also comprises:

[-] a central database [(21)], which stores all notifications together with their status of distribution[.];

[-] a message database [(22)], which contains the prepared message e.g. SMS, Voice messages, E-mail, Fax or, Telex messages, that are to be distributed to the different medium[.];

[-] message distribution databases [(23)-(27)], which contains all incoming notifications and prepared messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user[.];

[-] information databases [(28)-(30)][.];

[-] a message generator [(34)] for generating messages according to a profile previously specified by the member of the closed user group, which selects a notification from the central database [(21)], creates a new message for distribution by one of the selected media, and stores the prepared message in the message database [(22)] for further distribution[.]; and

[-] a message sender [(35)] for distributing the information to the user, which selects the available messages from the message database [(22)] and distributes the different messages types to the different distribution media[.];

[-] distribution senders [(36), (38), (39), (41), (42)] for sending messages to the user[.];

[-] distribution receivers [(37), (38), (40), (43)] for sending messages to the user[.];
and

[-] a message status handler [(44)], which reads out new information received in the medium databases for registration purposes to provide feedback for system and the central database [(21)].

2. (Amended) An information distribution system according to Claim 1, [characterised] characterized in that message distribution databases [(23)-(27)] are:

[-] a SMS message database [(23)], which contains all incoming notifications and prepared SMS messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via SMS[.];

[-] a voice message database [(24)], which contains the prepared voice messages that have to be distributed and the status of the voice messages[.];

[-] an E-mail message database [(25)], which contains all prepared E-mail messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via E-mail[.];

[-] a Fax message data-base [(26)], which contains all prepared Fax messages that have to be distributed to the requested addresses[.]; and

[-] a Data message database [(27)], which contains all prepared data messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via data messages[.];

3. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises;

[-] a History information database [(28)], which contains the history information in regard to users and events[.];

[-] a System info database [(29)], which contains all system parameters for tuning the system[.]; and

[-] a Personal information database [(30)], which contains the user specific information such as the user's service description including the templates which are used to generate messages for different medium in different languages[.];

4. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises;

- [-] a SMS sender [(36)], which distributes SMS-messages to the user[.];
- [-] a Voice Response Unit (VRU) sender/receiver [(38)], which handles inbound calls as well as outbound calls, that are handled according to the information stored in the voice message database [(24)][.];
- [-] an E-mail sender [(39)], which distributes E-mail messages to the user[.];
- [-] a Fax message sender [(41)], which distributes Fax-messages to the user[.]; and
- [-] a Data message sender [(42)], which distributes Data messages to the user[.]_

5. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises;

- [-] a SMS receiver [(37)], which receives SMS-messages from the user[.];
- [-] a voice Response Unit [(VRU)] sender/receiver [(38)], which handles inbound calls as well as outbound calls, that are handled according to the information stored in the voice message database [(24)][.];
- [-] an E-mail receiver [(40)], which receives E-mail messages from the user[.]; and
- [-] a Data message receiver [(43)], which receives Data messages from the user[.]_

6. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises;

- [-] a third party interface [(31)], which connects the system to an external system[.];
- [-] a third party application database [(32)], which contains the information of an external system[.];
- [-] a unit for classifying and updating history information [(33)][.]; which stores the updated information to the history information database [(28)][.]; and
- [-] a unit for having a user accessing the Internet page of the service provider and enter the notification information to his specific user profile[.]_

7. (Amended) An information distribution system according to Claim 1, characterized in that the system comprises:

- [-] a Presentation layer [(45)], which is used to maintain and monitor the service and as an interface for accessing all databases and processes.

8. (Amended) A method in a system for distributing information to closed user groups according to claim 1, characterized in that the method comprises the steps of:

- [-] translating a new message into a notification message by message generator [(34)] according to settings in the Personal information database [(30),];
- [-] informing the customer in case of a notification [(46)] using a certain medium[,];
- [-] selecting a new medium [(51)] in case the customer can not be reached with a certain medium[,];
- [-] repeating [(53), (54)] the steps of informing the customer and selecting a new medium [(51)] using all specified media until the customer is reached [(55)].

9. An airline information distribution system according to Claim 1, characterized in that the system is configured so, that

- [-] when a notification is sent [(①)] from the external system [(20)] to the system server [(17)], the system server [(17)] will send [(②)] a notification and an alternative flight offer over a medium [(18)] that is selected according to the user profile and that
- [-] when in case there is no response from the customer [(18)], an alternative medium [(19)] is selected according to the user profile [(③), (④)][,]; and that
- [-] when the customer confirms [(⑤)] the alternative flight booking there is a confirmation sent [(⑥)] back to the customer.

10. (Amended) An airline information distribution system according to Claim 9, characterized in that the system is configured so that a user can specify the conditions, in which the system server [(17)] will send notifications towards the user, and how the notifications are to be performed.

12. An airline information distribution system according to Claim 9, characterized in that the system is configured so that the user [(19)] can select to whom [(60) (5)] the notifications are to be sent [to].

ABSTRACT

The invention relates to a new type of solution for distributing information to closed user groups, and more particularly, to a new type of arrangement for airline information distribution. A system according to the invention comprises a system server that is connected to Internet, to a GSM network and to an external system interface, means for generating messages according to a profile specified by the user, and means for distributing the information to the user, the distribution means having a selection of different means for sending messages. The solution according to the invention can be used as a service solution in telecommunications networks.

SYSTEM AND METHOD FOR DISTRIBUTING AIRLINE INFORMATION TO CLOSED USER GROUPS.

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This invention relates to the provision of supplementary telecommunications services, and more particularly, to a new type of solution for distributing information to closed user groups. The invention also relates to a new type of arrangement for airline information distribution. The solution according to the invention can be used as a service solution in telecommunication networks.

In a modern world people are communicating with each other more often and this development is steadily increasing. The methods of communication have also changed. For instance, the use of SMS-messages (SMS, Short Message Service) has rapidly increased. The demand for new types of communication services and applications is clearly visible.

People nowadays have busier schedules and the communication with different parties is done more rapidly and altogether in a more efficient manner. All in all people like to get different notification information immediately, whether or not they are in or out of the office. People are also more used to communicating with different devices.

A growing number of people move and travel around a lot in their work. These people especially require that these different forms of information reach them as soon as possible.

From the side of different service providers there can be situations where a certain closed user group should be notified for one reason or another. Delays and late notifications decrease the level of service and also put

demands on personnel with regard to the handling of customers.

There has not been a good solution for solving these
5 problems so far. There is an increasing demand for a
solution for distributing information to closed user
groups.

The above problems exist especially in regard to airline
10 services. Travellers are usually very hard to reach in the
case of changed flight departures or flight cancellations.
Customers are often very frustrated with flight changes
and even more so when they receive the information too
late. The airlines have been demanding for an information
15 distribution solution to be developed that could overcome
these defects and that would provide a service of good
quality.

There are prior art solutions for distributing information
20 to a user by means of message-distributing systems, among
others deploying e-mail applications, based on wireless-or
wireline networks, mentioned in patent applications WO-A-
98 03005 and EP-A-0 836 301.

In patent application WO-A-98 03005, a method is disclosed
25 where a subscriber to a telephone operator can change
his/her personal settings concerning mail service, GSM
service, voice-mail service, IN service or another
service. In patent application EP-A-0 836 301, an e-mail
paging system is disclosed, where incoming usefull e-mails
30 are identified from junk mail and where a summary of e-
mail messages is sent to the user over a network different
from the network where email-messages are sent, and where
the recipient of said summary can select a forwarding
destination for said e-mail messages.

35

In the above mentioned prior art documents, methods and
arrangements are described where information distribution

5 The drawbacks of prior art solutions are that they do not provide the service provider with a solution for distributing the necessary information to the users nor do they support any communication from the user to the service provider.

10 The aim of this invention is to overcome the drawbacks of the prior art solutions and to provide a new type of solution for distributing information to closed user groups and also a new type of arrangement for airline information distribution.

15

According to the first aspect of the present invention there is provided a system for distributing information to closed user groups comprising a system server that is connected to Internet, to a GSM network, and to an external system interface, which is characterized by that the system also comprises means for generating messages according to a profile previously specified by the user, and means for distributing the information to the user, the distribution means having a selection of different means for sending messages. There is also provided a method for distributing information to closed user groups, which is characterized by that the method comprises the steps of informing the customer in case of a notification using a certain medium, selecting a new medium in case the customer can not be reached with a certain medium, and repeating the steps of informing the customer and selecting a new medium until the customer is reached or all media are used. Furthermore, there is provided an arrangement for airline information distribution comprising a system server that is connected to Internet, to a GSM network, and to an external system interface, which is characterized by that the system also comprises means for generating messages according to a profile

AMENDED SHEET

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In the network arrangement the GSM network 1 has a number of Mobile Switching Centers (MSC) 2, a Short Message Service Center (SMS-C) 3, a number of Base Station
35 Controllers (BSC) 4, and Base Stations (BS) 5 and GSM mobile phones 18. Short Message Service Center (SMS-C) 3 functions as a part of the operator's network used for SMS notification.

- means for distributing Fax-messages to the user,
- means for distributing Data messages to the user, and
- means for distributing Email-messages to the user.

5 Figure 2 is a block diagram of the system for distributing information to users according to the present invention. The system for distributing information to users according to the present invention comprises:

- a central database 21, which stores all notifications
10 together with their status of distribution,
- a message database 22, which contains the prepared message e.g. SMS, Voice messages, E-mail, Fax or, Telex messages, that are to be distributed to the different medium,
- 15 - a SMS message database 23, which contains all incoming notifications and prepared SMS messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via SMS,
- 20 - a voice message database 24, which contains the prepared voice messages that have to be distributed and the status of the voice messages,
- an E-mail message database 25, which contains all prepared E-mail messages that have to be distributed to
25 the requested addresses as well as all the feedback status information received from the user via E-mail,
- a Fax message database 26, which contains all prepared Fax messages that have to be distributed to the requested addresses,
- 30 - a Data message database 27, which contains all prepared data messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via data messages,
- a History information database 28, which contains the
35 history information in regard to users and events,
- a System info database 29, which contains all system parameters for tuning the system,

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TEL: +31 161 247742

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- a Personal information database 30, which contains the user specific information such as the user's service description including the templates which are used to generate messages for different medium in different languages,
- a third party interface 31, which connects the system to an external system,
- a third party application database 32, which contains the information of an external system,
- a unit for classifying and updating history information 33, which stores the updated information to the history information database 28,
- a message generator 34, which selects a notification from the Central database 21, creates a new message for distribution by one of the selected media, and stores the prepared message in the Message database 22 for further distribution,
- a message sender 35, which selects the available messages from the Message database 22 and distributes the different messages types to the different distribution media,
- a SMS sender 36, which distributes SMS-messages to the user,
- a SMS receiver 37, which receives SMS-messages from the user,
- a Voice Response Unit (VRU) sender/receiver 38, which handles inbound calls as well as outbound calls, that are handled according to the information stored in the voice message database 24,
- an E-mail sender 39, which distributes E-mail messages to the user,
- an E-mail receiver 40, which receives E-mail messages from the user,
- a Fax message sender 41, which distributes Fax-messages to the user,
- a Data message sender 42, which distributes Data messages to the user.

- a Data message receiver 43, which receives Data messages from the user,

- a message status handler 44, which reads out new information received in the medium databases for registration purposes to provide feedback for system and the Central database 21, and

- a Presentation layer 45, which is used to maintain and monitor the service and as an interface for accessing all databases and processes.

When the system according to the invention receives updated information that is to be distributed to a closed user group, this information is stored directly or via a human agent in a local database. The database contains information about the users and also contains the user specific service description, describing the personal data of a user with the different medium like GSM-number, SMS or Fax-number to contact him.

Based on the new messages stored in the Central database 21, the message generator 34 is triggered. The message generator 34 is the application to translate the information from the Central database 21 into the message database 22. The message generator 34 is a process that will run on the Administration server. The message generator 34 is a continuous process that will request the Central database 21 to get the next notification. The message generator 34 selects the next notification to be processed from the Central database 21 and creates a message based on the notification information and the related template information for the correct distribution medium indicated by the user. For example when preparing an SMS message, the message generator 34 reads the notification message from the Central database 21 and creates an SMS message based on the notification message and the user specific SMS-template stored in the Personal information database 30. The message generator 34 stores the result in the Message database 22.

The prepared message is stored in the Message database 22 for distribution. The message sender 35 distributes the messages stored in the Message database 22 to the database 23-27 of the right medium. Based on the system parameters stored in the System info database 29 this medium 36, 38, 39, 41, 42 will try for a certain time-period to get in contact with the user to inform him. The message sender 35 is a separate process and works in parallel to the message generator 34. In this way new media can easily be added, without changing the complete system. The message sender 35 is a process that will run on the Administration server. The Message sender 35 is a permanent process that will read the Message database 22 on information to pass through. The application will read and remove the next message from the Message database 22 based on the First In, First Out (FIFO) principle and place it in the right medium Message database 23-27.

20 If the user can not be contacted or does not confirm the message in time, the Message status handler 44 will remove the message from the Medium database 23-27 and will ask the Message Generator 34 to generate a message of a different medium to contact this particular user. The
25 Message status handler 44 is a permanent process that will read the Medium databases 23-27 and System Info database 29 on information to pass through to Central database 21.

30 The Presentation layer 45 can be used to handle and present all requested management information and can also be used to measure the performance of the overall system. By adjusting the system parameters stored in the System Info database 29, the Presentation layer 45 can be used to test different System Configurations.

35 Figure 3 is a flowchart diagram of a method for distributing information to closed user groups according to the present invention using the example of airline

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information distribution arrangement. In the method there is first a notification 46 that will start the procedure. For example, in case of a cancellation, delay or rescheduling of a flight the airline wants to inform the customer and when possible offer him an alternative flight 5 47. There is an occurrence message 48 delivered to the customer. In case the customer is not reached and the message is still relevant 49, the message will be distributed again 50 to the customer.

10

The system tries to contact the user using a certain medium. When the customer can not be reached with a certain medium there will be a new medium selected 51. The system will continue to contact the customer again 53, 15 until the medium is out of time 54. Then, if the customer is not reached again and the message is still relevant 49, there will be a new medium selected 51. In case that all media are used there is a status message 52 stating that the customer could not be reached. In the case where the 20 user can be contacted, the user is requested to confirm the proposed alternative flight arrangement 55. The reservation will be then made accordingly 56.

In the case where an alternative flight is confirmed by 25 the user 55, the confirmation should be registered within the booking system 57. Where the confirmation is handled within the booking system 57, the user will receive a confirmation message 59. Otherwise, the user will be informed about the problems with the confirmation 58 and 30 will be offered when possible another alternative.

Figure 4 is an illustrative diagram showing an arrangement for airline information distribution according to the present invention. The airline information distribution 35 arrangement according to the invention comprises a system server 17 that is connected to Internet 11, to a GSM network 1 and to an external system interface 20. The airline information distribution arrangement also
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comprises a means for checking messages according to a profile previously specified by the user, a means for generating messages, and a means for distributing the information to the user having a selection of different
5 means for sending messages.

The arrangement initiates when a notification is sent ① from the external system 20 to the system server 17. The system server 17 will then send ② a notification and an alternate flight offer over the GSM network 1 as an SMS-message to the customer 18. In case there is no response from the customer 18, an alternative medium is selected according to the user profile. Next, there is an E-mail message sent ③ to the customer's personal computer 19. If there is still no response from the customer 19, a third alternative medium is selected according to the user profile. As a third notification there will be a Voice message sent ④ to the GSM terminal 60 of the customer's secretary. When the customer's secretary 60 confirms ⑤ the alternative flight booking a confirmation will be sent ⑥ back to the GSM terminal 60 of the customer's secretary. The above mentioned process is an example and the means of communication and the order of communicating is configurable.

25 The user can specify the conditions, in which the system
server 17 will send notifications towards the user, and
how the notifications are to be performed. The user can
access the Internet page of the service provider and enter
30 the notification information to his specific user profile.
The user 19 can also select to whom 60 ⑤ the
notifications are sent to. The user can also select the
service to be charged via the phone bill.

35 The airline can receive updated flight information that a certain flight is cancelled, delayed or has had a schedule change. This information is stored directly or via a human agent in a local database. The database contains
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12

information about which passengers are booked on a certain flight and also contains the service description of all passengers, describing the personal data of a user with the different media like GSM-number, SMS, Fax-number, E-mail or telex to contact the user.

When the user is contacted, he is informed and given the possibility to either confirm the message or to be connected to a helpdesk agent for further information. In case a proposed alternative flight is accepted, the Message Status Handler and Confirmation Handler will check the local database whether the proposed alternative flight is still available. The application on the database will compose a message to confirm the registration to the user that is handled via the overall described procedure.

As feedback to the system the user can respond on several alternatives for a change in flight, request for refund of money, request for connecting to the helpdesk, or request for repeating the message. The messages are first of all selected on priority and secondly on time so that the sending of important message can be secured even in the case of high traffic loads.

System solution according to the invention is flexible and scaleable because of the modular, process oriented design. System has a secure and easy connection to the network by using an open architecture.

26-06-2001

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TEL: +31 161 247742

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WHAT IS CLAIMED IS:

1. A system for distributing information to closed user groups comprising a system server (17), preserving
5 personal settings of members of said closed user group, that is connected to Internet (11), to a GSM network (1) and to an external system interface (20), where the system provides mail services, GSM-services, voice mail services, GSM-services, IN services or another service being
10 subscribed of a telephone provider, characterized in that the system also comprises
 - a central database (21), which stores all notifications together with their status of distribution,
 - a message database (22), which contains the prepared
15 message e.g. SMS, Voice messages, E-mail, Fax or, Telex messages, that are to be distributed to the different medium,
 - message distribution databases (23)-(27), which contains all incoming notifications and prepared messages
20 that have to be distributed to the requested addresses as well as all the feedback status information received from the user,
 - information databases (28)-(30),
 - a message generator (34) for generating messages
25 according to a profile previously specified by the member of the closed user group, which selects a notification from the central database (21), creates a new message for distribution by one of the selected media, and stores the prepared message in the message database (22) for further
30 distribution, and
 - a message sender (35) for distributing the information to the user, which selects the available messages from the message database (22) and distributes the different messages types to the different distribution media,
 - 35 - distribution senders (36), (38), (39), (41), (42) for sending messages to the user,

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- distribution receivers (37), (38), (40), (43) for sending messages to the user, and
 - a message status handler (44), which reads out new information received in the medium databases for
- 5 registration purposes to provide feedback for system and the central database (21).

2. An information distribution system according to Claim 1, characterised in that message distribution databases
10 (23)-(27) are:

- a SMS message database (23), which contains all incoming notifications and prepared SMS messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user
15 via SMS,
- a voice message database (24), which contains the prepared voice messages that have to be distributed and the status of the voice messages,
- an E-mail message database (25), which contains all
20 prepared E-mail messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via E-mail,
- a Fax message database (26), which contains all prepared Fax messages that have to be distributed to the
25 requested addresses,
- a Data message database (27), which contains all prepared data messages that have to be distributed to the requested addresses as well as all the feedback status information received from the user via data messages,

30

3. An information distribution system according to Claim 1, characterized in that the system comprises
- a History information database (28), which contains the history information in regard to users and events,
 - 35 - a System info database (29), which contains all system parameters for tuning the system,

- a Personal information database (30), which contains the user specific information such as the user's service description including the templates which are used to generate messages for different medium in different
5 languages,

4. An information distribution system according to Claim 1, characterized in that the system comprises
- 10 - a SMS sender (36), which distributes SMS-messages to the user,
 - a Voice Response Unit (VRU) sender/receiver (38), which handles inbound calls as well as outbound calls, that are handled according to the information stored in
15 the voice message database (24),
 - an E-mail sender (39), which distributes E-mail messages to the user,
 - a Fax message sender (41), which distributes Fax-messages to the user,
 - 20 - a Data message sender (42), which distributes Data messages to the user,

5. An information distribution system according to Claim 1, characterized in that the system comprises
- 25 - a SMS receiver (37), which receives SMS-messages from the user,
 - a Voice Response Unit (VRU) sender/receiver (38), which handles inbound calls as well as outbound calls, that are handled according to the information stored in
30 the voice message database (24),
 - an E-mail receiver (40), which receives E-mail messages from the user,
 - a Data message receiver (43), which receives Data messages from the user,

35

6. An information distribution system according to Claim 1, characterized in that the system comprises

- a third party interface (31), which connects the system to an external system,
- a third party application database (32), which contains the information of an external system,
- 5 - a unit for classifying and updating history information (33), which stores the updated information to the history information database (28),
- a unit for having a user accessing the Internet page of the service provider and enter the notification
- 10 information to his specific user profile,

7. An information distribution system according to Claim 1, characterized in that the system comprises

- 15 - a Presentation layer (45), which is used to maintain
and monitor the service and as an interface for accessing
all databases and processes

8. A method in a system for distributing information to closed user groups according to claim 1, characterized in that the method comprises the steps of

- translating a new message into a notification message by message generator (34) according to settings in the Personal information database (30),
- informing the customer in case of a notification (46) using a certain medium,
- selecting a new medium (51) in case the customer can not be reached with a certain medium,
- repeating (53), (54) the steps of informing the customer and selecting a new medium (51) using all specified media until the customer is reached (55).

9. An airline information distribution system according to Claim 1, characterized in that the system is configured so, that

- 35 - when a notification is sent (④) from the external system (20) to the system server (17), the system server (17) will send (②) a notification and an alternative

flight offer over a medium (18) that is selected according to the user profile and that

- when in case there is no response from the customer (18), an alternative medium (19) is selected according to
- 5 the user profile (③), (④), and that
- when the customer confirms (⑤) the alternative flight booking there is a confirmation sent (⑥) back to the customer.

10 10. An airline information distribution system according to Claim 9, characterized in that the system is configured so that a user can specify the conditions, in which the system server (17) will send notifications towards the user, and how the notifications are to be performed.

15

11. An airline information distribution system according to Claim 9, characterized in that the system is configured so that a user can access the Internet page of the service provider and enter the notification information to his

20 specific user profile.

12. An airline information distribution system according to Claim 9, characterized in that the system is configured so that the user (19) can select to whom (60) (⑤) the

25 notifications are to be sent to.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



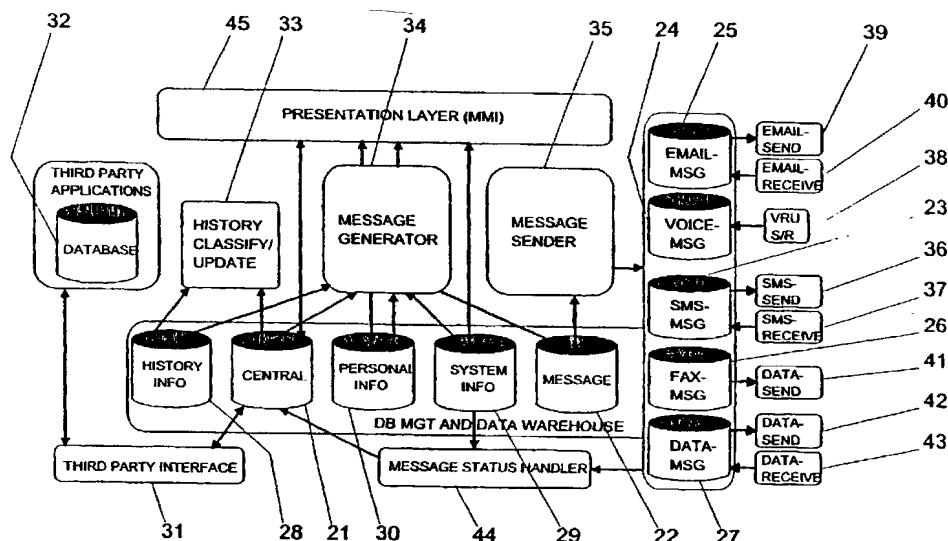
(43) International Publication Date
7 December 2000 (07.12.2000)

PCT

(10) International Publication Number
WO 00/74323 A1

- (51) International Patent Classification⁷: **H04L 12/58**,
H04Q 7/38
- (21) International Application Number: PCT/EP99/03819
- (22) International Filing Date: 31 May 1999 (31.05.1999)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): **TELEFONAKTIEBOLAGET LM ERICSSON** [SE/SE];
S-126 25 Stockholm (SE).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **WOLS, Ralph**
[NL/NL]; De Zoom 4, NL-5052 TA Goirle (NL).
- (74) Agent: **KÄRKKÄINEN, Veli-Matti**; Ericsson Telecommunicatie B.V., Intellectual Property Dept., P.O. Box 8, NL-5120 AA Rijen (NL).
- (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:
— With international search report.
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD FOR DISTRIBUTING AIRLINE INFORMATION TO CLOSED USER GROUPS



(57) Abstract: The invention relates to a new type of solution for distributing information to closed user groups, and more particularly, to a new type of arrangement for airline information distribution. A system according to the invention comprises a system server that is connected to Internet (11), to a GSM network (1), and to an external system interface (20), means for generating messages (34) according to a profile previously specified by the user, and means for distributing the information to the user (35), the distribution means having a selection of different means (36, 38, 39, 41, 42) for sending messages. The solution according to the invention can be used as a service solution in telecommunications networks.

WO 00/74323 A1

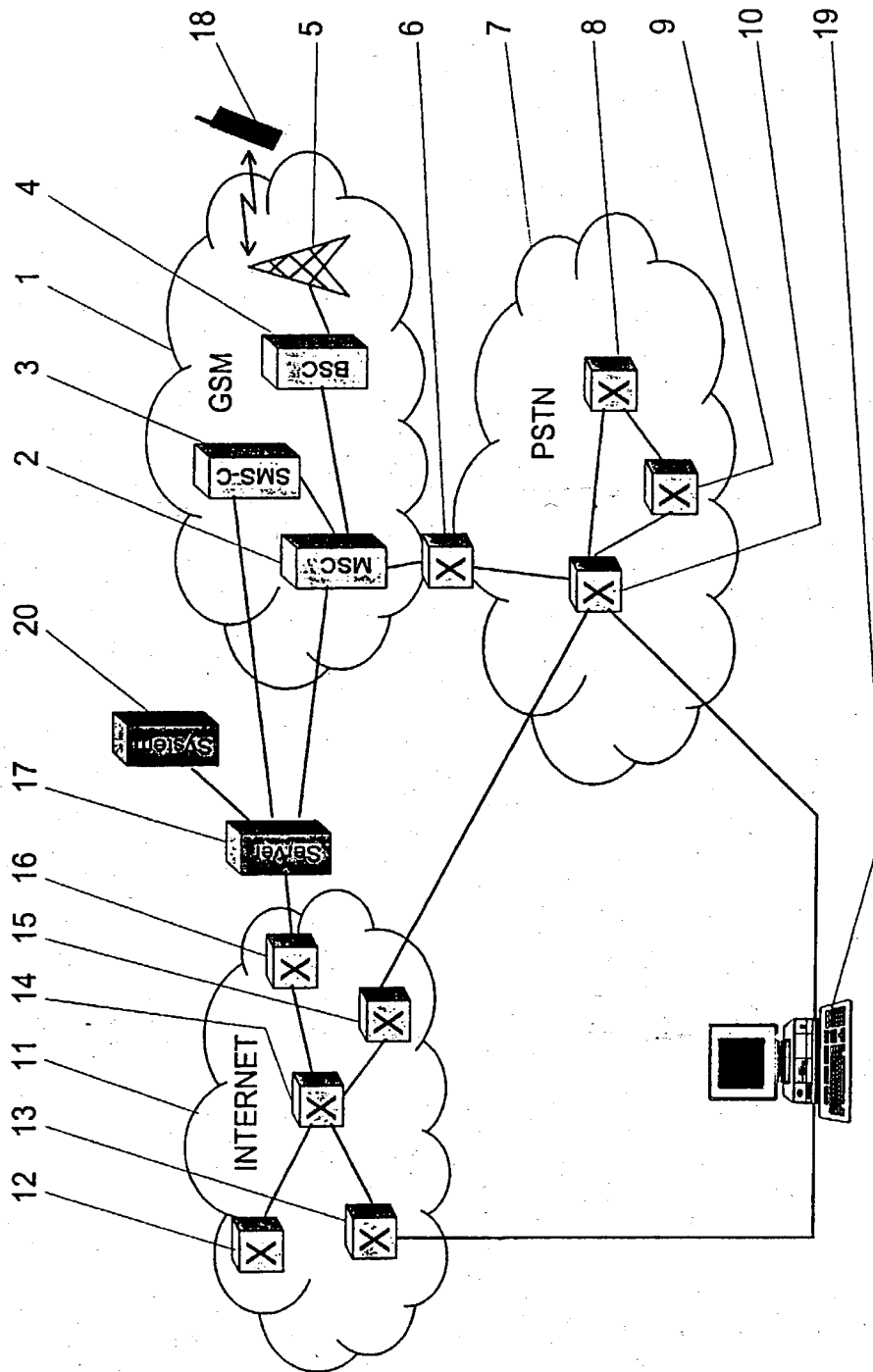


FIG. 1

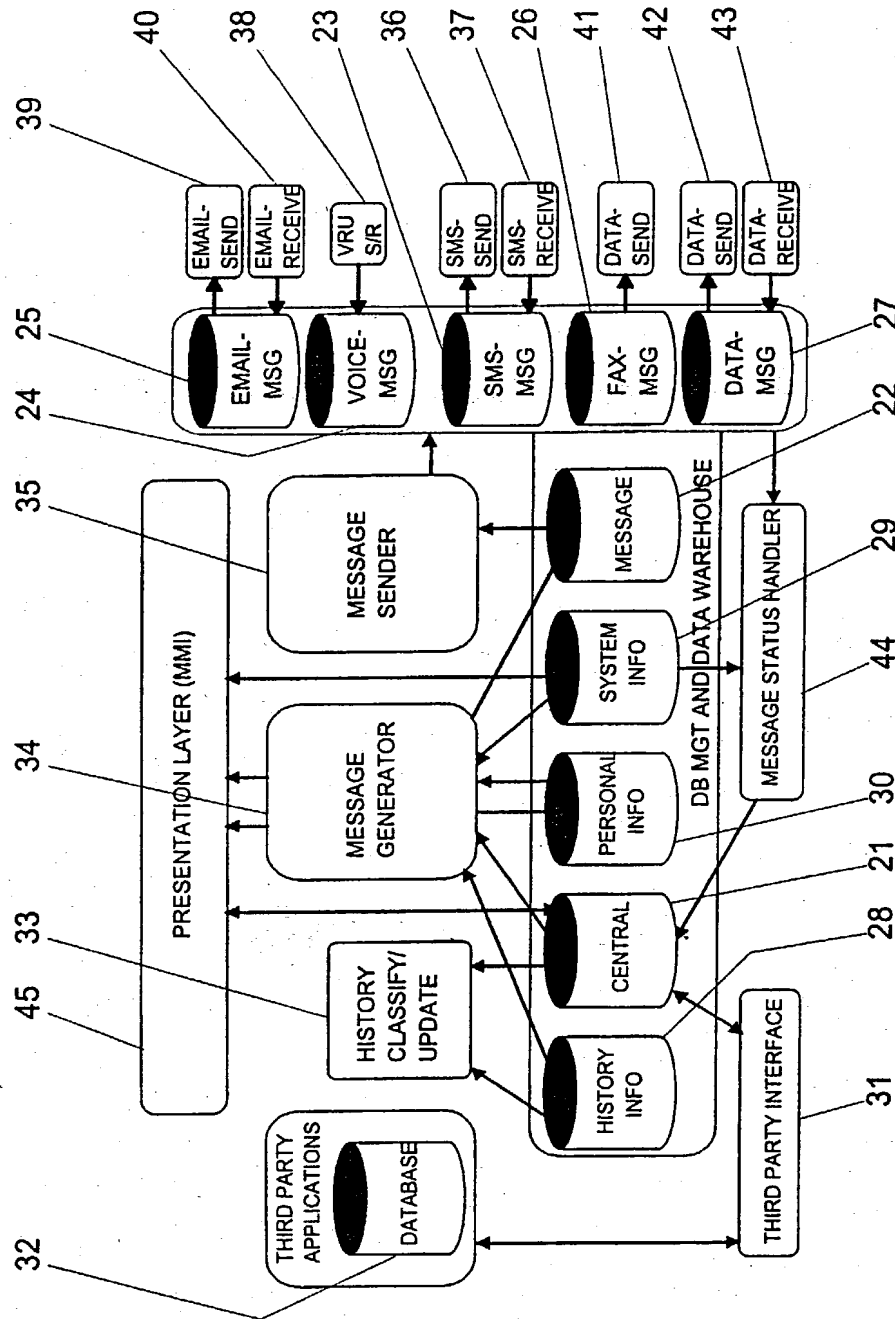


FIG. 2

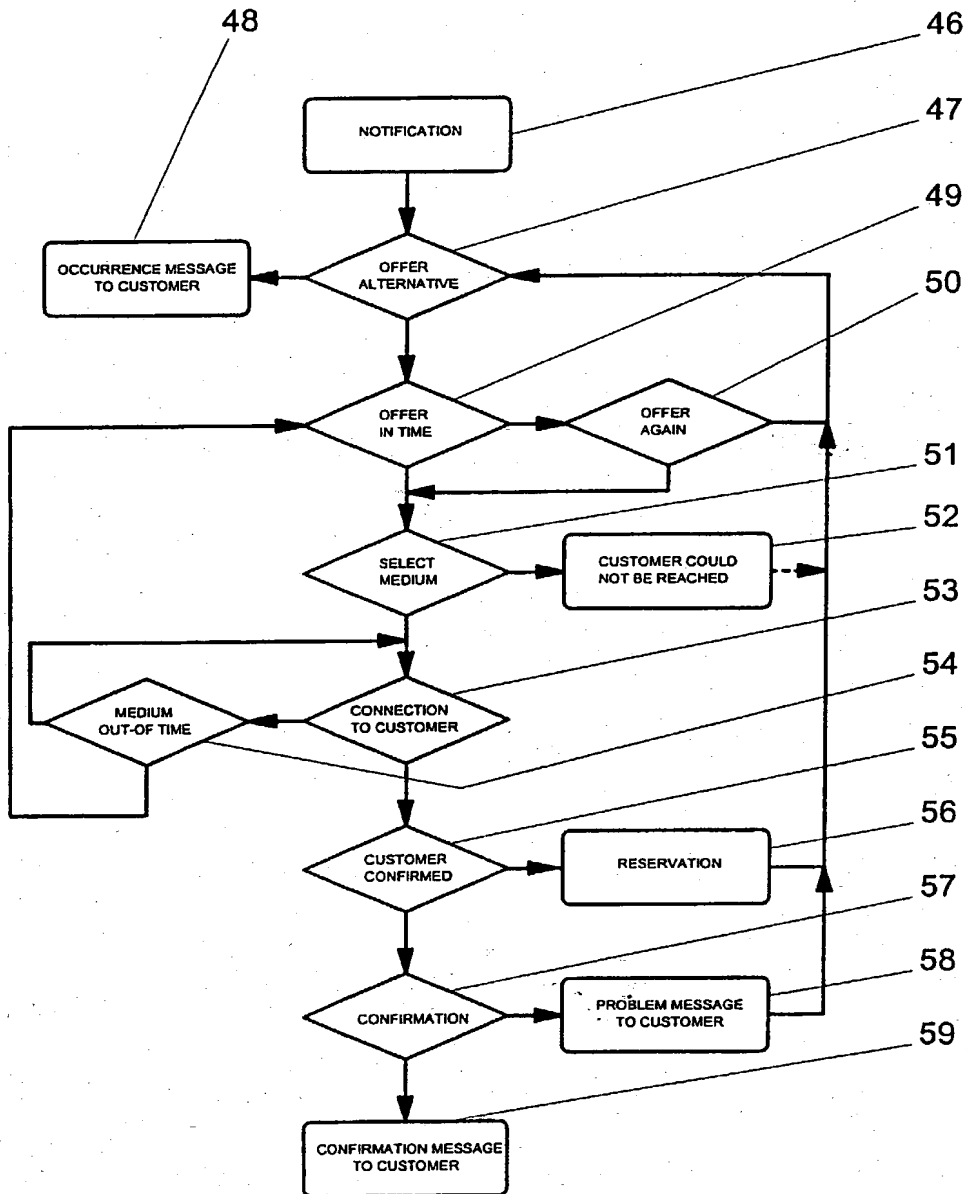


FIG. 3

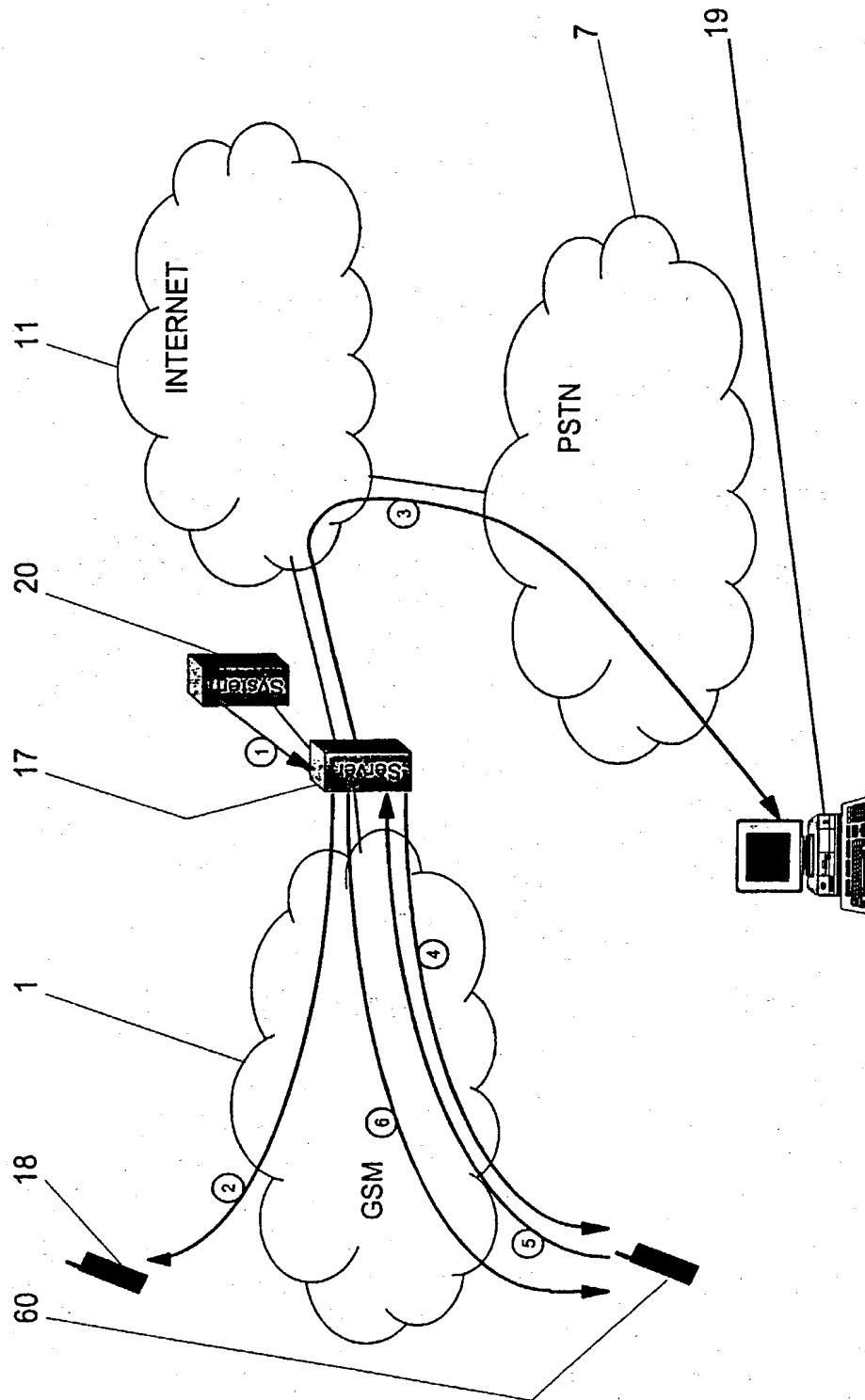


FIG. 4

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My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SYSTEM AND METHOD FOR DISTRIBUTING AIRLINE INFORMATION TO CLOSER USER GROUPS

the specification of which (check only one item below):

- ☐ is attached hereto.
- ☐ was filed as United States application
 Number _____ on _____
 and was amended _____ on _____ (if applicable).
- ☒ was filed as PCT international application
 Number PCT/EP99/03819 on May 31, 1999
 and was amended _____ on June 26, 2001 and November 30, 2001 (if applicable).

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COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. § 119	
PCT	PCT/EP99/03819	31 May 1999	X Yes	No
			Yes	No
			Yes	No
			Yes	No
			Yes	No

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I hereby appoint the following attorneys and agent(s) to prosecute said application and to transact all business in the Patent and Trademark Office connected therewith and to file, prosecute and to transact all business in connection with international applications directed to said invention:

William L. Mathis	17,337
Robert S. Swecker	19,885
Platon N. Mandros	22,124
Benton S. Duffett, Jr.	22,030
Norman H. Stepno	22,716
Ronald L. Grudziecki	24,970
Frederick G. Michaud, Jr.	26,003
Alan E. Kopecski	25,813
Regis E. Slutter	26,999
Samuel C. Miller, III	27,360
Robert G. Mukai	28,531
George A. Hovanec, Jr.	28,223
James A. LaBarre	28,632
E. Joseph Gess	28,510
R. Danny Huntington	27,903

Eric H. Weissblatt	30,505
James W. Peterson	26,057
Teresa Stanek Rea	30,427
Robert E. Krebs	25,885
William C. Rowland	30,888
T. Gene Dillahunt	25,423
Patrick C. Keane	32,858
B. Jefferson Boggs, Jr.	32,344
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Peter K. Skiff	31,917
Richard J. McGrath	29,195
Matthew L. Schneider	32,814
Michael G. Savage	32,596
Gerald F. Swiss	30,113
Charles F. Wieland III	33,096

Bruce T. Wieder	33,815
Todd R. Walters	34,040
Ronni S. Jillions	31,979
Harold R. Brown III	36,341
Allen R. Baum	36,086
Brian P. O'Shaughnessy	32,747
Kenneth B. Leffler	36,075
Fred W. Hathaway	32,236
Wendi L. Weinstein	34,456
Mary Ann Dillahunt	34,576



21839

and:

Address all correspondence to:



21839

Ronald L. Grudziecki
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, Virginia 22313-1404

Address all telephone calls to: Ronald L. Grudziecki at (703) 836-6620.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF SOLE OR FIRST INVENTOR	Ralph WOLS
Signature	
Date	05-02-2007
Residence (City, State, Country)	Goirle, NETHERLANDS NLX
Citizenship	NETHERLANDS
Mailing Address	De Zoom 4, NL-5052 TA
City, State, ZIP, Country	Goirle, NETHERLANDS
FULL NAME SECOND INVENTOR, IF ANY	
Signature	
Date	
Residence (City, State, Country)	
Citizenship	
Mailing Address	
City, State, ZIP, Country	